

ONE-STEP PRODUCTION OF 1,3-PROPANEDIOL FROM
ETHYLENE OXIDE AND SYNGAS WITH A
COBALT-IRON CATALYST

5 Abstract of the Invention

Disclosed is a new catalyst composition comprising a bimetallic Co-Fe catalyst, optionally complexed with a ligand selected from a N-heterocycle, phosphine, or porphorine ligand, that provides a lower cost alternative for the one step synthesis of 1,3-propanediol (1,3-PDO) from ethylene oxide and synthesis gas. For example, a catalyst containing cobalt carbonyl: iron carbonyl with no ligand, or a catalyst containing a cobalt carbonyl: octaethylporphine iron acetate provide moderate yields of 1,3-PDO in a one step synthesis under mild conditions.